Extended Abstract

Programs for Preventing Internet Addiction during Adolescence: A Systematic Review*

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Abstract

With the Internet having become an inevitable part of life, Internet addiction, being on the agenda, is viewed as a significant problem for adolescents and is frequently a subject of research. One observes that in addition to studies on the prevalence of Internet addiction during adolescence and its relation to different variables, efforts to prevent Internet addiction in adolescence in recent years have particularly started to gain importance. The number of studies on preventing Internet addiction has been rather limited compared to other types of studies, yet studies on preventing Internet addiction have great value because they allow for intervention before Internet usage becomes a problem. The aim of this research is to systematically review studies examining the effectiveness of programs that have been implemented to prevent Internet addiction during adolescence. For this purpose, the keywords of Internet addiction, Problematic Internet use, Adolescence, Prevention, Intervention, School-based, and Psycho-education have been searched in the databases of Science Direct, Pubmed, Cochrane, Wiley Online Library, and Ulakbim both in Turkish and English. The resulting 435 articles from the literature search have been evaluated according to the PRISMA guide; the selection criteria determined for this research and the five articles that met the required criteria have been included in the research. The selected articles have been examined in terms of research method, program applied, instrument used, and effectiveness of the applied program. The studies under investigation are seen to reveal positive results for preventing Internet addiction in adolescents.

Keywords

Adolescence • Internet addiction • Prevention • Psycho-education • Group counseling

Internet addiction, having become one of the most important problems of today's youth, is defined as a disorder where the individual is unable to control their Internet usage, which causes problems in their professional and social lives (Beard & Wolf, 2001; Young, 2007). As an essential source of information, the Internet is an indispensable tool for adolescents' basic social interactions and sharing (Ceyhan, 2011). This situation has led to an increase in the time they spend on the Internet. Research on Internet addiction during adolescence reveals that increases in the time adolescents use the Internet leads to an increase in their Internet addiction levels (Yang & Tung, 2007). Risk factors are an important issue in research on Internet addiction during adolescence. Time spent on the Internet is seen as an important risk factor for Internet addiction among adolescents. The more time they spend using the Internet, the more their Internet addiction scores increase (Tahiroğlu et al., 2010). In addition to the time spent on the Internet, the intention for using the Internet plays an important role in their Internet addiction (Siyez & Uz Baş, 2013). High school students who use the Internet primarily for chatting and games are seen to have higher dependency scores than those who use the Internet primarily for social networks, music, films, and homework/research (Yılmaz, Şahin, Haseski, & Erol, 2014).

Internet addiction rates, having significantly increased these days among adolescents, necessitate studies on preventing Internet addiction during adolescence. In the literature survey, although many studies exist that examine the relation of Internet addiction to different variables during adolescence, the limited number of studies carried out on preventing Internet addiction is noteworthy.

The aim of this study is to provide a general framework for programs preventing Internet addiction during adolescence by systematically examining these programs and their effectiveness. Based on this goal, the following questions have been researched:

1. How have the research models and research groups been determined in research on the effectiveness of programs aimed at preventing Internet addiction during adolescence?

2. What are the number of sessions, session durations, and session content of the programs for preventing Internet addiction during adolescence?

3. Which measurement tools were used in research on the effectiveness of programs aimed at preventing Internet addiction during adolescence?

4. How effective have programs been for preventing Internet addiction during adolescence?

Method

This study is a systematic review aimed at examining programs applied to prevent Internet addiction during adolescence and these programs' effectiveness. Following a

systematic and structured approach, this study uses the PRISMA guide for systematic reviews when performing the literature review (Moher, Libertai, Tetzlaff, Altman, & PRISMA Group, 2009). The literature review was conducted without restriction in terms of year during February and March 2017 in Turkish and English in the databases of Science Direct, Pubmed, Cochrane, Wiley Online Library, and Ulakbim. The terms of Internet bağımlılığı, Problemli Internet kullanımı, Ergen, Önleme, Müdahale, Okul temelli, and Psiko-eğitim were used for the search in Turkish, and the terms of Internet addiction, Problematic Internet use, Adolescence, Prevention, Intervention, School-based, and Psycho-education were used for the search in English.

The following selection criteria for identifying articles resulted from the literature review: (a) studies involving preventative intervention for Internet addiction or problematic Internet use, (b) studies carried out on adolescents, (c) studies involving information about the content of prevention programs, and (d) studies that show the effects of applied programs using statistical data. The exclusion criteria are as follows: (a) studies examining the effectiveness of programs on treating Internet addiction, (b) studies with only an abstract, (c) review studies, and (d) descriptive studies.

A total of 435 articles were reached as a result of the literature review. As a result of the criteria, five articles have been selected for inclusion within the scope of the study.

Results

The properties of the five research articles selected and examined in this study are presented in Table 1. These articles include studies conducted in Turkey, Kazakhstan, Korea, Hong Kong, and Italy.

Discussion

When generally evaluating the effectiveness of programs on preventing Internet addiction that were included under the scope of the research, all programs have been found effective at reducing tendencies toward Internet addiction. In addition, all the investigated studies with the exception of one included a control group to increase the reliability of the applied programs' effectiveness.

Within the scope of the studies, the programs' contents that were applied to prevent Internet addiction are found to focus on the following cognitive, emotional, and behavioral themes: develop conscious Internet use; increase academic motivation; develop effective use of time; improve communication skills; increase self-esteem and reduce anxiety; help individuals recognize their strengths and make positive self-assessments; develop problem-solving skills; provide knowledge on different types of addiction, common symptoms of dependency, short- and long-term results of addiction,

Table 1
Properties of Selected Research

Author, Year, Location	Study Design and Research Group	Time and Length of Program	Content of the Program	Measuring Instruments	Results and Comments
Gyeong Ran & Hee Sook (2011), Korea	* A 2x2 mixed design using pretest/posttest and experimental/control groups. *N = 37 Experimental group: n = 18 Control group: n = 19 * High school students (Age not specified.)	* A group counseling program applied over 10 sessions, each lasting 50 minutes.	* Addresses the goals of creating a supportive group climate, understanding Internet addiction, recognizing one's strengths, making positive self-assessments, and developing problem-solving skills.	* Korean Internet Addiction Proneness Scale for Youth-Short Form: Self Report (Korea Agency for Digital Opportunity & Promotion, 2008)	* A significant difference in favor of the experimental group was found between the experimental and control groups' Internet addiction scores.
Andrisano Ruggieri et al. (2016), Italy	* A single-group pretest/posttest model was used from among the pre-trial models. * Experimental group: N = 10 * 13 year-olds.	* During the year, a weekly 3-hour peer-education program was applied.	* Includes active methods such as brainstorming, circle time, role playing, tutoring, and peer action.	* Internet Addiction Scale (Young, 1998b)	* A significant decrease in the experimental group's posttest scores was seen compared to their pretest scores.
Berber Çelik (2016), Turkey	* 2x3 mixed design using pretest/posttest and follow-up measurements on experimental and control groups. *N = 30 Experimental group: n = 15 Control group: n = 15 * High school students (15-18 years old)	* A 5-session psycho-education program, each session lasting 1-1.5 hours, applied to reduce tendencies for Internet addiction.	* A program was applied to deal with conscious Internet use, effective use of time, academic motivation, and efficient studying.	*Problematic Internet Use Scale (Ceyhan, Ceyhan, & Gürcan, 2007)	* A significant difference among the experimental group's pretest, posttest, and follow-up measurements was obtained from the PIKO when compared to the control group. The posttest and follow-up test scores were found to be significantly lower than their pretest scores.
Berdibayeva et al. (2016), Kazakhstan	*2x2 mixed design using pretest/posttest and experimental/control groups. *N = 48 * Unspecified number of participants in experimental and control groups. * High school students (15-17 year olds)	* A preventative psycho-education program applied over 7 sessions, each lasting 1-1.5 hours.	*To improve communication skills, enhance self-esteem, and reduce anxiety.	* Internet Addiction Scale (Young, 1998b)	* A decrease in the number of students with tendencies toward Internet addiction was seen in the experiment group.
Shek et al. (2016), Hong Kong, China	* 2x2 mixed design using pretest/posttest and experimental/control groups. *N = 1246 Experimental: n = 679 Control group: n = 567 * Primary school 5th- & 6th-grade students (11-12 year olds)	*The program varied from school to school, in terms of life education lessons and unstructured durations of two days of intensive practice to one month of gradual application.	*Developed over the nature of addiction and cognitive, emotional, social, and behavioral competences with content for providing awareness and knowledge about different types of dependencies, their signs, and short- and long-term consequences.	* A 57-item measurement tool was used and developed within the scope of the research.	*A significant difference between uncontrollable Internet use was found in favor of the experimental group compared to the control group.

and how to avoid dependency; improve effective decision making skills; learn healthy ways to improve positive emotions by recognizing different emotions; recognizing different types of peers and being aware of peer effects; and developing basic interpersonal skills for social interactions. Meanwhile, the programs are seen to have overlooked psychosocial problems such as healthy identity formation, lack of social support and loneliness, lack of social skills, and cognitive distortions in adolescents. For this reason, prevention programs developed in the future should include areas such as supporting the development of healthy identity, preventing/inhibiting various psycho-social problems, acquiring social skill, and recognizing cognitive distortions.

The examination of the literature showed that prevention programs for reducing problem behaviors in adolescents should: not only remove negative behaviors but simultaneously provide opportunities to try prosocial behaviors; not only focus on risk factors but also on protective factors; and not only be designed for adolescents but also for families, teachers, and the school environment. In particular, these programs should include emphasis on the importance of postponement behaviors and the necessity of peer support (Siyez, 2010). When evaluating the studies addressed in this research in terms of these criteria, the programs are seen to not include achievements related to prosocial behaviors or postponement behaviors, but are seen to include risk factors.

A remarkable point about the investigated research is that none of them used a placebo group. Considering that Internet addiction is associated with the variables of deficient social interaction and loneliness (Caplan, 2003; Nalwa & Anand, 2003), the prevention programs could have had effective results due to group experiences that contributed to adolescents' social relations independent of program content. Therefore, the use of placebo groups in future studies is believed to allow for a clearer assessment of a programs' effectiveness of content.

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